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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,162	02/18/2004	Thomas L. Andrews	01-296	6084

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KLEIN, O'NEILL & SINGH  
2 PARK PLAZA  
SUITE 510  
IRVINE, CA 92614

EXAMINER

RAHLL, JERRY T

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/781,162

**Applicant(s)**ANDREWS ET AL. **Examiner**

Jerry T. Rahl

**Art Unit**

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-14 and 19 is/are rejected.
- 7) ☒ Claim(s) 4-6, 16-18 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings submitted 18 February 2004 have been reviewed and determined to facilitate understanding of the invention. The drawings are accepted as submitted.

### *Specification*

2. The abstract of the disclosure is objected to because it exceeds the maximum length of 50 words. Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 7, 9-11, 14 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,724,316 to Morton.
5. Morton describes an optical fiber (10) adhered to an exterior surface of a vessel (16) and a detector (14) operable to detect damage to the fiber that is representative of damage (see Column 4 Lines 52-66) to the vessel (see Figure 1 and Columns 4-6). The recitation that the vessel be a composite pressure vessel has not been given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951)

Art Unit: 2874

6. Further, Morton describes an injector (12) operable to inject a light signal into an end of the optical fiber and a detector (14) operable to detect the light signal at an end of the optical fiber.

7. Morton does not specifically describe a comparator operable to compare first and second light signals injected into the optical fiber at different times. However, Morton discusses sensing changes in the parameters of the fiber representing the shape of the vessel. The device it would inherently necessitate a comparator to detect a change in such a parameter.

8. Further, Morton describes the light signal injector as a light emitting diode (see Column 4 Line 43).

9. Further, Morton describes the optical fiber including a silica (glass) core (see Column 1 Line 25).

10. Further, Morton describes the optical fiber adhered to the exterior surface of the vessel by embedding in a resin (36).

11. Further, Morton describes the optical fiber wound on the vessel in a uniform two-dimensional pattern (see Figure 1) with adjacent windings are spaced from each other.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 8 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morton.

Art Unit: 2874

14. Morton describes a sensing device as described above. Morton does not specifically describe the detector as a PIN diode or an avalanche photodiode. However, the examiner takes official notice that PIN diodes and avalanche photodiodes are extremely commonly used forms of photodetectors. Morton describes the use of a photodetector for the detector. Therefore, it would have been obvious to one of ordinary skill in the art to use a commonly known type of photodetector (PIN diode or avalanche photodiode) for the detector (14) described by Morton.

15. Morton does not specifically describe the vessel as a COPV or high pressure gas storage vessel. However, there is no significance to using one type of vessel over another. Where the instant specification and evidence of record fail to attribute any significance (novel or unexpected results) to a particular arrangement, the particular arrangement is deemed to have been a design consideration within the skill of the art. In re Kuhle, 526 F.2d 553, 555, 188 USPQ 7, 9 (CCPA 1975).

***Allowable Subject Matter***

16. Claims 4-6, 15-18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. Claims 4-6 and 15 describe the signal injector and detector both coupled to a first end of the fiber. Claims 16-17 describes a method of providing 2D map of the fiber and locating a discontinuity on the map. Claim 20 describes the winding pattern having at least one helical and axial winding.

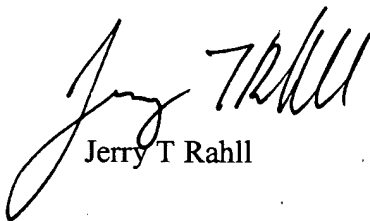
Art Unit: 2874

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry T. Rahll whose telephone number is (571) 272-2356. The examiner can normally be reached on M-Th (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jerry T Rahll

  
**AKM ENAYET ULLAH**  
**PRIMARY EXAMINER**